



COMMONWEALTH OF MASSACHUSETTS  
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**DRAFT RESPONSE ACTION OUTCOME (RAO)**  
**TECHNICAL SCREENING AUDIT FORM VERSION 9A**

DEVELOPED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE SITE CLEANUP WITH INPUT FROM THE LICENSED  
SITE PROFESSIONAL ASSOCIATION – LOSS PREVENTION COMMITTEE

*Disclaimer:*

The attached checklist is for use by the Department of Environmental Protection (the Department) in reviewing Response Action Outcomes (RAOs), and may not be used, cited, or relied upon by any other party or for any other purpose. This checklist is not a comprehensive list of RAO requirements, and RAOs reviewed by the Department may contain errors that are not identified on this checklist. Completion of this checklist by the Department staff or contractors does not constitute a final decision by the Department, and the Department reserves the right to make findings of fact contrary to the information recorded on this checklist if the Department determines that such findings are warranted by reliable data. The information recorded on this checklist does not create any legal rights in any party, and does not relieve any party of obligations that exist pursuant to M.G.L. c. 21E, 310 CMR 40.0000, or other applicable laws and regulations. Nothing in this checklist shall be construed as, or operate as, barring, diminishing, or in any way affecting any legal or equitable right of the Department.



# DRAFT DEP BWSC RAO TECHNICAL SCREENING AUDIT FORM

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Lead RTN:		
<b>SUBMITTAL TYPE (Circle one)</b>	OHM description: (Source, Type of OHM, Media Affected)	Date RAO Rcvd ____/____/____
RAO      RAO-P      LSP Eval. Opin. Waiver Compl. St.      RAO w/ AUL  Other: Related RTNs:	Site Use:	
Town: _____ Site Name: _____		
Address: _____		
PRP/OP: _____		LSP Name: _____
Consultant: _____		LSP No.: _____
<b>TECHNICAL SCREENING CHECKLIST</b>		
<b>Condition</b>		<b>Page #</b>
<b>I. SITE CONCERNS (Based upon conditions at time of RAO submittal)</b>		
<b>A. Time Critical Conditions</b>	<b>Yes    No    ?</b>	
1. <input type="checkbox"/> Applicable GW-2 standard exceeded@ residence/school with no soil gas/indoor air sampling	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
2. <input type="checkbox"/> More than 0.5" NAPL observed in any monitoring well	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
3. <input type="checkbox"/> One or more data points exceeds UCL	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
4. <input type="checkbox"/> EPC in S-1 soil exceeds Method 1 standard and school/residence within 500 feet	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
5. <input type="checkbox"/> Site contaminants impacting indoor air	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
<b>B. Drinking Water</b>	<b>Yes    No    ?</b>	
1. Site within potential drinking water source area (PDWSA)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
2. Site located within IWPA/mapped Zone II	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
3. Private/Non- municipal public well(s) located within 500 feet of site	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
4. Municipal well(s) located within 1000 feet of site	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
5. <input type="checkbox"/> Private well contaminated as a result of site	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
6. <input type="checkbox"/> Public water supply contaminated as a result of site	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
<b>C Contaminated Soil</b>	<b>Yes    No    ?</b>	
1. Category S-3 Soils	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
2. Category S-2 Soils	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
3. Category S-1 Soils	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
<b>D. Site and Area Use</b>	<b>Yes    No    ?</b>	
1. Industrial (no children likely to be present)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
2. Commercial (limited presence of children)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
3. School/Institution	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
4. Residential	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
<b>E. Released OHM [Contaminant Type(s)]</b>	<b>Yes    No    ?</b>	
1. Petroleum Fuel Oils	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
2. Gasoline, lube oils, waste oils and other petroleum products	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
3. Metals, coal tar, PCBs, pesticides/herbicides, asbestos	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
4. Chlorinated Solvents or Other	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
<b>F. Environmental Concerns</b>	<b>Yes    No    ?</b>	
1. Site within 500 feet of surface water and/or wetlands	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
2. Endangered species habitat, ACEC and/or certified vernal pool within 500 feet	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
3. Confirmed contamination of surface water, sediments and/or wetlands with site contaminants	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
<b>G. Site Complexity</b>	<b>Yes    No    ?</b>	
1. Media other than groundwater or soil affected (surface water, air, sediment)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
2. Co-mingled plumes (i.e., different sources from one or more sites co-mingled)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
3. Bedrock contamination	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
If <input type="checkbox"/> conditions currently exist, see supervisor to discuss.		

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II. TECHNICAL ADEQUACY	Citation(s)	Yes	No	?	NA	Page #
<b>A. Remedial Response Actions – Indication That:</b>						
1. Documentation of removal of remediation waste provided	40.0033 (5), (6)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Remediation waste properly managed ( reqmnts -Air 95%,gw, sw [NPDES], soil properly handled)	40.0031-40.0049	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Obtained DEP or other agency approvals and work done in accordance with approvals	40.0100(4), 40.0170(2-3, 5)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>B. Source/Extent Investigations – Indication That:</b>						
1. History of OHM use/storage/disposal at the site included	40.0405(1), 40.0833, 40.0923(1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Potential source(s) identified, characterized, or abated (septic leach field, floor drain, AST, etc.)	40.0923(2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Extent of contamination defined (including downgradient)	40.0904(2)(a)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. Potential or actual OHM analyzed for and/or evaluated (metals, VPH, VOCs, etc.)	40.0926(1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. All likely migration pathways (soil/gw/ sw/air/sediment) identified/characterized/evaluated	40.0904(2)(c)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. Proper sample collection technique/preservation/analysis/data reporting	40.0017	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C. Risk Characterization – Indication That:</b>						
1. Background identified or characterized	40.0904(2)(b)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Soil/groundwater category properly identified	40.0930	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. EPC calculation provided (spatial or temporal) and EPC properly calculated	40.0926	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. Hot Spot(s) addressed, identified (as Hot Spot) and not added in to other EPCs	40.0924(2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. Migration Pathways (air, groundwater, etc.) assessed and evaluated in RC (All Methods, media dependent)	40.0904(2)(c)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. Applicable soil and/or groundwater standards not exceeded (Method 1 or 2) or AUL applied	40.0974, 40.0975	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7. Correct risk characterization method used	40.0941, 40.0942	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8. All receptors accounted for (construction worker, trespassers, wetland, etc.) or AUL applied (Method 3)	40.0920-40.0922	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9. Proper Exposure Scenario assumptions (exposure period, etc.) (Method 3)	40.0923-40.0925	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10. All Exposure Pathways (dermal, inhalation, etc.) evaluated (Method 3)	40.0925	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11. Final RAO for facility/property submitted with total site risk calculated (Method 3)	40.0993(7)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12. AUL Permitted/Inconsistent Activities, etc. understandable to general public and clearly written	40.0923(4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>III. Response Action Outcome Statement (RAO) Indication That:</b>						
1. RAO boundaries defined/delineated (clear description/plan of RAO boundaries)	40.1003(4), 40.1056(2)(a)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Relationship of RAO to other RAOs for that location has been defined	40.1056(1)(d)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Correct RAO category	40.1030 – 40.1050	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. Indication as to whether OHM(s) exceed UCLs presented	40.1056(1)(i)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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<b>A. CLASS A – Indication That:</b>		Yes	No	?	NA	Page #
1. All uncontrolled sources have been eliminated or controlled	40.1035 (2)(b)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Groundwater concentrations do <i>not</i> exceed standards in GW-1 area	40.1036(5)(b)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Phase IV, Phase V or Post RAO O&M, where required, has been completed	40.1036(6)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>A-1. CLASS A-1 – Indication That:</b>						
1. A permanent solution has been achieved	40.1036(1)(a)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. The level of OHM at the site has been reduced to background	40.1036(1)(a)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Response actions eliminated all threats of release and a release oil and/or hazardous material to the environment has <i>not</i> occurred	40.1036(1)(b)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>A-2. CLASS A-2 – Indication That:</b>						
1. A permanent solution has been achieved	40.1036(2)(a)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. A background feasibility evaluation has been conducted which demonstrates that achievement of background is not feasible	40.1020(3), 40.1056(2)(e)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>A-3. CLASS A-3 – Indication That:</b>						
1. A permanent solution has been achieved	40.1036(3)(a)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Obligations and Conditions of AUL have been implemented	40.1036(3)(c), 40.1056(2)(g)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Reasonable AUL restrictions to maintain No Significant Risk (deep OHM, long exposure period, etc)	40.1074(2)(d-f, h)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. A background feasibility evaluation has been conducted which demonstrates that achievement of background is not feasible	40.1020(3), 40.1056 (2)(e)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. Groundwater or Soil OHM concentrations do <i>not</i> exceed UCLs	40.1036(3)(d)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>A-4. CLASS A-4 – Indication That:</b>						
1. A permanent solution has been achieved	40.1036(4)(a)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Obligations and Conditions of AUL have been implemented	40.1036 (4)(c), 40.1056(2)(g)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Reasonable AUL restrictions to maintain No Significant Risk (deep OHM, long exposure period, etc)	40.1074(2)(d-f, h)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. Groundwater or Soil concentrations exceed UCLs; however: (check only a, b, or c)	40.1036 (4)(d), 40.1036(5)(a)	---	---	---	---	
a. concentrations are consistent with background	40.1036(5)(a)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b. contaminated soil is <i>greater</i> than 15 feet below grade	40.1036 (4)(d), 40.1036(5)(a)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c. contaminated soil is beneath an engineered barrier	40.1036 (4)(d), 40.1036(5)(a)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. Engineered barrier does compare favorably to all other alternatives	40.0859(4), 40.1036(4)(e)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. UCL Feasibility Evaluation conducted and shows that achieving UCLs is not feasible	40.1036(4)(e), 40.1056(2)(f)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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<b>B. CLASS B – Indication That:</b>					
1. Remedial actions have <i>not</i> been conducted	40.1045(2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. A level of No Significant Risk does exist	40.1045(1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Initial Assessment, Phase I, or Phase II has been completed	40.1046(5)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>B-1. CLASS B-1 – Indication That:</b>					
1. One or more AULs are <i>not</i> necessary to maintain a level of no significant risk	40.1046(1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>B-2. CLASS B-2 – Indication That:</b>					
1. Obligations and Conditions of AUL have been implemented	40.1046(2)(a), 40.1056(2)(g)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Reasonable AUL restrictions to maintain No Significant Risk (deep OHM, long exposure period, etc)	40.1074(2)(d-f, h)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Groundwater or Soil OHM concentrations do <i>not</i> exceed UCLs	40.1046(2)(b)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>B-3. CLASS B-3 – Indication That:</b>					
1. Obligations and Conditions of AUL have been implemented	40.1046(3)(a), 40.1056(2)(g)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Reasonable AUL restrictions to maintain No Significant Risk (deep OHM, long exposure period, etc)	40.1074(2)(d-f, h)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. OHM concentrations exceed UCLs; however: (check only a or b)	40.1046(3)(b),(c)	---	---	---	---
a. soil is located <i>greater</i> than 15 feet from ground surface	40.1046(3)(b)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. UCL Feasibility Evaluation was conducted and shows that achieving UCLs is not feasible	40.1046(3)(c)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>C. CLASS C – Indication That:</b>					
1. All substantial hazards have been eliminated	40.1050(1), 40.1056(2)(d)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Soil and/or groundwater concentrations exceed any applicable standards	40.1050(2)(b)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Phase II and Phase III were submitted	40.1050(3), 40.1050(4)(a)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Plan of definitive & enterprising steps to achieve a permanent solution is included	40.1050(5)(a), 40.1056(2)(j)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Statement indicating whether post RAO Active O&M will be conducted is included	40.1056(1)(e)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Plan for post-RAO active O&M is included	40.1056(2)(l)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>